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NOTES ON THE PNEUMOGASTRIC.

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(Continued from page 78.)

Influence of the Pneumogastric upon the Stomach.—As early as 1801, Bichat observed that irritation of the pneumogastriacs produced contraction of the muscular coat of the stomach. This fact has been confirmed by Tiedemann, Gmelin, and more recently by Longet. The last named author has likewise observed that these contractions are very marked during stomach digestion, but are wanting when the stomach is empty. He has also found that irritation of the splanchnic nerves, while it produces movements in the intestines, does not affect the stomach. When the pneumogastriacs are irritated, the contractions of the stomach are tardy, resembling the action of the sympathetic nerves upon unstriated muscular tissue. From these facts, Longet concludes that the motor nerve-filaments of the stomach, although contained in the pneumogastriacs, are derived by anastomosis from the sympathetic system. We have already seen that the pneumogastriacs receive, in the neck, a large supply of sympathetic fibres, from the cervical ganglia.

The effects of section of the pneumogastriacs upon the stomach have been clearly demonstrated by Bernard. He found that upon division of these nerves, the contractions of the muscular walls instantly ceased, the mucous membrane lost its turgescence and became pale, the secretion of gastric juice was arrested and the sensibility of the organ was abolished. Schiff, however, has found that the movements of the stomach, although immensely diminished in activity, are not entirely abolished, for substances may still be very slowly passed to the pylorus. These movements he attributes to local irritation of the intramuscular terminal nervous filaments. It has been asserted by Tiedemann and Gmelin, that digestion, arrested by section of the pneumogastriacs, may be, to a certain extent, reestablished by galvanization of the peripheral extremities of the divided nerves.

Section of the pneumogastriacs effectually prevents the action of emetics and cathartics. This fact has been established, and its causes most thoroughly investigated, by Prof. Horatio C. Wood, Jr., of Philadelphia, in a most elaborate and conclusive series of experi-

ments.* These were fifty-one in number, upon dogs, cats and rabbits, most of them being vivisections; and the results may be concisely stated as follows:—

1. After section of the pneumogastrics, the largest doses of such emetics and cathartics as arsenic, tartar emetic, veratria, croton oil, gamboge and calomel, with rare exceptions, failed to produce vomiting or purging.

2. In these cases, there was no secretion of gastric or intestinal mucus, whose production in large quantities is the usual result of these drugs, and is essential to their action.

3. These results are not due to non-absorption of the medicines, for these and other poisons produce death quite as speedily as when the nerves are not divided.

4. The absence of purging cannot be explained by failure of muscular action, for the peristaltic action of the bowels continues, after section of the pneumogastrics.

5. One probable explanation of this phenomenon lies in the accumulation of carbonic acid in the blood; for animals, hypodermically injected with veratria, but with nerves intact, immersed in an atmosphere of carbonic acid, died without vomiting or purging. This cannot be the sole cause, however, for enough carbonization of the blood is required to produce insensibility, while, after section of the nerves, vomiting and purging are prevented, long before this stage is reached.

6. A second cause is probably the interference with the circulation of the lungs backing up the blood in the pulmonary artery, consequently in the right heart, and finally in the portal circulation, arresting the action of the mucous glands.

7. A third cause is perhaps shock.

8. The opposite results obtained by Brodie and Reid may be explained by the occasional failure of section of these nerves to affect the pulmonary circulation.

Dr. Wood, therefore, attributes the stoppage of vomiting and purging by section of the pneumogastrics entirely to arrest of the secretory function of that nerve, but seems to leave out of the question the reflex function of the medulla oblongata, by which gastric irritation is transmitted from the pneumogastric to the phrenic nerve, and which doubtless contributes to emesis, in those cases where the emetic is given by the stomach. In these cases, the irritation of the emetic transmitted to the medulla by the centripetal fibres of the vagus, excites simultaneously the secretory filaments of that nerve, filling the stomach with mucus, and the excito-motor fibres of the phrenic, causing spasmodic contraction of the diaphragm. In cases of cerebral vomiting, the emetic influence seems to be transmitted at first, entirely through the phrenic, hypersecretion not commencing

* Horatio C. Wood, Jr., "On the Influence of Section of the Cervical Pneumogastrics upon the Action of Emetics and Cathartics."—*American Journal of Medical Sciences*. Vol. ix. 1870.

until the stomach is emptied of its alimentary contents; and, in the case of some of the most prompt emetics, such as sulphate of zinc and turpeth mineral, the reflex action upon the phrenic doubtless precedes that upon the secretory filaments of the pneumogastric.

In this connection, it will be interesting to consider the relation of the pneumogastric to the etiology of migraine or sick-headache, especially since the subject has been so clearly and beautifully brought to the notice of the profession by Dr. Anstie in his work on neuralgia, and also in recent numbers of the *Practitioner*.^{*} Concerning the nature of this distressing and obstinate affection, the most diverse opinions have been and are still held. Of recent writers, we find Du Bois Reymond maintaining that it is due to a tetanic condition of the vaso-motor nerves of the affected side of the head, the pain being analogous to that felt during tetanic contraction of voluntary muscles, or the unstriated muscles of the uterus, intestines, &c. Moellendorf, on the other hand, thinks that hemicrania is based on the appearance of a paralytic condition of the vaso-motor nerves controlling the carotid artery of one side, which causes relaxation and distention of the arteries of the brain. Dr. Anstie differs from both of these writers in calling migraine a trigeminal neuralgia, a view which has, of late years, been pretty generally held by the profession in England. There is one essential point, however, in which Dr. Anstie takes an independent position, and that is, in locating the primary lesion in the medulla oblongata, instead of the chylo-poietic viscera, as is more commonly believed. Migrainous pain, he contends, means an atrophic molecular irritation in the trigeminal root, and migrainous vomiting means a similar process in the vagus root. That is to say, an irritation in the floor of the fourth ventricle, being propagated in one direction by the trigeminal, gives rise to pain, and in another direction by the vagus, upsets the stomach. He admits the frequency of simple dyspeptic headaches, with vomiting and a foul tongue; but a true migraine he describes as a trigeminal neuralgia, complicated with vomiting, though the tongue is clean, occurring at regular intervals, induced by over-fatigue, and not by over-eating, beginning in early life in persons whose family history shows nervous disease, and passing off in middle life, or merging into some other form of nervous affection, as epilepsy, asthma, angina pectoris, or persistent facial neuralgia. In accordance with this view, his treatment is strongly tonic; fasting is discountenanced, and the patients are put upon an abundant diet, with cod-liver oil. Drastic cathartics are considered pernicious, as weakening the digestive power, and reducing the general strength. The indications during an attack, he maintains, are entirely for the relief of pain and production of sleep. For this purpose, he relies chiefly upon caffeine, given by the mouth if it can be borne, otherwise hypodermi-

^{*} F. E. Anstie. *Neuralgia and its Counterfeits*. London: 1871.

Ibid. A Clinical Lecture on Migraine. *Practitioner*, November and December, 1872.

cally. If this fail, he resorts to the hypodermic use of morphia. Dr. Allbutt* replies to Dr. Anstie, contending that gastro-hepatic disturbance plays the most important part in the production of this affection; but the difference between these two gentlemen seems to be chiefly one of classification, for the cases which Allbutt considers typical are not admitted by Anstie to be true migraine. In this country, I am sure but a small minority of the sick-headaches can be classed under Anstie's definition of migraine, for the most frequent cases appear to be such as Chamberst† so graphically describes, and which are dependent upon the centripetal rather than the centrifugal function of the pneumogastric.

The researches of Dr. Waller, of Geneva,‡ upon the effects of compression of the cervical pneumogastrics, for the relief of various nervous affections, have been reserved for the close of this paper, as they bear upon all three of its divisions. Although the cases reported are few, they possess a strong interest, both in reference to the importance of the results and the physiological mechanism whereby these results are obtained. He reports five cases illustrating the effects of pressure upon persons in health, and four cases in which it was applied as a therapeutic agent. The pressure is applied with the thumb, over the carotid artery on one side, usually a little below the angle of the jaw, the thumb being moved until a sensitive spot is found, which he considers indicative of the presence of the vagus. It will be remembered that the nerve lies in the posterior groove between the carotid artery and the internal jugular vein. The symptoms produced in his own case are thus described: "A moderate pressure soon occasions a deep-seated sensation, of a peculiar benumbing character, in the head, which scarcely amounts to pain." Then follows "a sense of languor and of fainting, as if 'going off,' which is so manifest that, if the head and body be not supported, and if pressure on the nerve be continued, complete syncope ensues. Simultaneously, other symptoms of a respiratory, cardiac and gastric nature make their appearance. The respiration, at first arrested for a few moments, becomes heaving and retarded; the heart's action, depressed in force, is disturbed and irregular, as may be felt by the pulsation of the carotid, under the finger. The gastric symptoms are marked uneasiness over the stomach, sometimes amounting to nausea and even vomiting."

In the other cases, the effects were similar, but the heart's action was reduced in frequency as well as in force. In two of them, the cheek and ear of the side upon which pressure was made were observed to be paler and of lower temperature than those of the opposite side; and in one, there was slight protrusion of the eyeball.

These symptoms Waller attributes to an irritation by pressure of

* Clifford Allbutt on Migraine. *Practitioner*, January, 1873.

† On the Indigestions. 1870.

‡ Augustus Waller. On the Effects of Compression of the Vagus Nerve, in the Cure or Relief of Various Nervous Affections. *Practitioner*, April, 1870.

the trunk of the pneumogastric and the cervical cord of the sympathetic, which lies beneath it, so that it is impossible to make firm pressure upon the one without also pressing upon the other. By comparing these symptoms with the effects of galvanization of these nerves, we find them to be identical. The retardation of the heart's pulsations, and the slow, heaving respiration result from irritation of the inhibitory nerve-fibres of those organs in the vagus; the diminution of arterial pressure is due to irritation of the depressor nerve, and the nausea may arise from irritation of gastric nerve-fibres, or may be wholly or in part dependent upon the faintness. The pallor and reduction of temperature of the cheek and ear, and protrusion of the eye-ball, are symptoms referable to irritation of the sympathetic, being among the characteristic symptoms of Basedow's disease, an affection whose primary lesion is in the cervical sympathetic ganglia, or the adjacent cilio-spinal centre of the spinal cord. The peculiar benumbing sensation in the head is probably caused by cerebral anæmia, from irritation of vaso-motor nerves. With regard to the faintness and nausea, it is difficult to say which nerve contributes the most to them, for they may be induced by galvanization of either the vagus or sympathetic. Waller lays the most stress upon the irritation of the vagus; but, as it is impossible to press upon this, without also pressing the sympathetic cord, the two sets of symptoms are necessarily simultaneous and liable to confusion.

Previous writers, who had made use of pressure upon the neck, supposed its effects to be due to obstruction of the arterial or venous circulation, and Dr. Waller himself shared this belief until 1861, when he became convinced that these phenomena are of purely nervous origin. Dr. Parry, of Bath, was the first to apply practically, in the early part of this century, what he termed compression of the carotids, for inducing sleep, and for the immediate relief of attacks of hysteria and epilepsy; but long before his day, Aristotle had written "that if the veins of the neck become compressed exteriorly, one sees a man shut his eyes and fall down senseless, as if he were strangled, although he is not so." But Waller shows that compression of the carotid arteries will not induce the symptoms described, adducing the fact that, in animals, both carotids may be tied, without producing any disturbance of the heart's action, or of innervation. In man, too, the ligation of one of the carotids gives rise, in the great majority of cases, to no immediate symptoms of a marked character, the secondary symptoms which occasionally supervene, such as convulsions, coma, collapse, &c., being of a totally different nature, and generally attributable to lesions of the brain. In those rare cases in which impaired eyesight and syncope have immediately followed the ligation of the artery, it is likely that the vagus or sympathetic nerves, or both, have been included in the ligature; for, when such is the case in animals, the symptoms are found to be similar. Ligation of the internal jugular vein has also

been frequently performed, without any peculiar symptoms resulting, although a case is within my knowledge where ligature of one of these veins, for hemorrhage, was followed by coma of three days' duration. Even in this case, it is not unlikely that the nerves were included in the ligature. Simultaneous compression of both internal jugulars would undoubtedly produce some cerebral congestion, whose symptoms would, however, differ essentially from those described by Waller; but it is probable, from the manner in which the pressure is made by him, that the circulation in these veins is but slightly, if at all, impeded. Taking these circumstances in connection with the known effects of irritation of the vagus and sympathetic nerves, we may safely conclude that Waller's views are sound, and a valuable addition to medical science.

The cases which he reports, in which a therapeutic application was made of compression of the pneumogastric, are not sufficiently numerous for generalization, but are very striking and suggestive. In one of them, violent nervous disturbance of the heart, with hysterical symptoms, came on in a lady suffering from an attack of acute rheumatism. Compression was made, first of one vagus, and afterwards of both. In a few minutes, the agitation had subsided, the heart's action became quieter and more regular, and finally, all the nervous symptoms subsided. A few minutes afterward, she sank into a steady sleep and, on awakening, was perfectly quiet, and the cardiac symptoms never re-appeared.

Another case was that of a lady, who, in consequence of a fall on the previous day, had severe neuralgia of the head and back, hyperæsthesia of the ulnar and median nerves, much mental excitement, a small pulse, at eighty, and frequent fits of obstinate vomiting. Pressure was applied to the left vagus. The result was perfect quietude, with laborious breathing, for about ten minutes; pulse weak and irregular. After removing the pressure, the pulse fell to seventy, and became full and regular, the patient lying quiet, and apparently unconscious, for upwards of ten minutes more. When she came to her senses, the vomiting had ceased, and did not return. The pain and excitability had left. The fulness of the pulse remained for some hours.

A third case was that of a lady with an irritable stomach, the sequela of gastritis, who had frequent attacks of spasmodic vomiting. One of these attacks was quieted by Dr. Waller, by pressure on one of the vagi, and subsequently the patient acquired the habit of making the pressure herself, when nausea came on, and always with the effect of quieting the stomach and preventing emesis.

The fourth and last case was that of a young lady who had suffered for several months from a severe hemicrania, recurring periodically, every day. In this case, Dr. Waller resolved to make use of pneumogastric compression as a "perturbating" agent, as he expresses it, and, to that end, while the patient was in the sitting

posture, made strong compression of both vagi. Syncope occurred immediately, and she remained quiet and unconscious for two hours, although the respiration and heart's action were regular. The result was, that she had had, in the two years intervening between this treatment and the report of the case, not the slightest return of the hemicrania.

We ought not to leave Waller's pressure method without referring to Rothroch's cases of the therapeutic application of *ice* to the neck, in the region of the pneumogastric.* This was done in cases of hysterical delirium, one being idiopathic, and the other following the use of an anæsthetic; and also in a case of suspended respiration, in etherization. In all the cases, the application was immediately followed by a deep, heaving respiration, and restoration to consciousness, with muscular relaxation. There was no faintness, however, as is the case when pressure is made; and no mention is made of any retarding of the heart's action. It is difficult to tell in what way the ice acted, in these cases. Dr. Rothroch supposes that it, in some way, supplied the *besoin de respirer*, and that shock, also, was a not unimportant factor. Shock, however, was not the sole agency, for when the ice was applied to the *head*, no effect was produced. This mode of treatment is so easily applied, that it is to be hoped it may be given a general trial.

In closing this paper, it need only be said, that the fear of adding unduly to its length has necessitated the omission of much that properly belongs to the subject, such as the relations of the pneumogastric to the larynx and to the liver, and the various forms of pneumogastric neuralgia. The object of the essay will have been accomplished, if it has succeeded in reviewing, with clearness and accuracy, the most recent investigations concerning some of the more obscure functions of the *vagus*; and, while showing what brilliant results have already been accomplished, indicating the yet unopened mines of wealth that remain for the reward of future explorations.

THE EDINBURGH MEDICAL LADIES IN THE CRIMINAL COURT.—The Edinburgh lawyers have been fluttered somewhat by the steady pursuit of knowledge by the Edinburgh medical ladies in the criminal court of that city. It seems they feel a deep interest in the proceedings of the Court, and have been a welcome audience until the other day, when it was thought necessary to send the macer to them with the information that evidence was about to be given not fit for ladies' ears, and they had better therefore retire. This, however, they declined to do. A man was then sworn, and, on being asked to detail the injuries inflicted on him (it being a case of filthy assault), appealed to the Court that he could not explain while those ladies were present. But the Court was helpless to expel them and they declined to go. With many blushes, and in faltering accents, the witness then told his sorrows, but we suppress the details.—*Medical Times and Gazette*, May 17, 1873.

* J. T. Rothroch. Ice to the Neck in Hysteria, and also in Suspended Respiration *Philadelphia Medical Times*, Vol. iii., No. 53, p. 67.

Progress in Medicine.

REPORT ON MENTAL DISEASES.

By T. W. FISHER, M.D.

SINCE the scientific work of Griesinger, the philosophical one of Maudsley, and the practical one of Blandford, no general treatise on insanity has appeared. Many books, lectures, monographs and papers of great variety and interest in special departments, have, however, shown an increasing attention to the study of mind in its relations to the brain in health and disease. In the half dozen pages allowed this report, we can do no more than mention a few of them, leaving the reader to explore for himself the paths pointed out. It is impossible to summarize progress on such a subject satisfactorily.

MENTAL SCIENCE.

Illustrations of the Influence of the Mind on the Body. By Daniel H. Tuke, M.D., M.R.C.P. Lea: Philadelphia. 1873. 400 pp. 8vo.

Body and Mind: The Gulstonian Lectures for 1870. By Henry Maudsley, M.D. London: MacMillan & Co. 1870. 12mo. pp. 189.

The Principles of Psychology. By Herbert Spencer. New York: Appleton. 1872. 3 vols. 12mo.

Mind and Matter, or Psychological Inquiries. By Sir Benjamin Brodie, Bart., D.C.L. New York: Wood & Co. 1873. 12mo. pp. 280.

Mind, Brain, and Spinal Cord: The Croonian Lectures. By C. B. Radcliffe, M.D., &c. *Lancet and Brit. Med. Jour.*, March, et seq. 1873.

Unconscious Action of the Brain and Epidemic Delusions. Popular Lectures. By W. B. Carpenter, M.D., F.R.S. Estes & Lauriat. Boston. 1873.

Purely metaphysical speculation is at a discount, and is carefully avoided in the work of Tuke. He gives a long series of instances in which the mind affects the body—properly classified under its three grand divisions—assigning to the intellect 154, to the emotions 243, and to the will 33. These range from cases of disordered sensation, to paralysis and death. The preponderating influence of the emotions corresponds with the well-known primary character and frequency of moral and emotional forms of mental disorder.

Dr. Maudsley treats the same general subject in a less objective manner. He says, "we know not what mind is, but we are bound to investigate, in a scientific spirit, the laws of its functions." "Volition, we know, but the will, apart from particular acts of volition, we do not know." "Impressions made there (on the nerve cells of the hemispheres) are the physiological conditions of *ideas*; the feeling of the ideas is *emotion*, for I hold emotion to mean the special sensibility of the vesicular neurine to ideas; the registration of them is *memory*; and the reaction to them is *volition*. *Attention* is the maintenance of the tension of an idea; *reflection*, the successive transference of energy from one to another."

Spencer's elaborate application of the principles of positivism to psychology, is too learned, and too logical, to be neglected by any reader, however prejudiced against his system of philosophy. He at-

tempts to show that in an ultimate analysis of the relations of mind and body, a nervous impulse may become identical with a unit of consciousness, or if not, that they at least *look* like two sides of the same thing.

Sir Benj. Brodie, whose book was recently noticed in this JOURNAL, would consider such views as rank materialism. He says, "when the materialist argues that we know nothing of mind except as being dependent on material organization, I turn his argument against himself, and say that the existence of my own mind is the only thing of which I have any absolute and positive knowledge." Also, "the properties of mind are so wholly different from those of matter, the two are so completely asunder, that they do not admit the most distant comparison."

Dr. Radcliffe, in his first lecture on Mind, vs. Spirit, thinks the phenomena of *memory* show that impressions are made on some less perishable and shifting material than the cerebral cells; that the mind goes out to find the records of memory *everywhere*. He opposes the positivists and argues that mind keeps the brain together, and the body alive.

Dr. Carpenter's first lecture shows how great a portion of our life consists in unconscious cerebration, which may be counted unconscious mental action by some—yet mind, without consciousness, seems to be a contradiction in terms. A new book by R. R. Noel, on "The Physical Basis of Mental Life" (Longmans, 8vo. pp. 74), has just appeared in London, but I can learn nothing of it, except that it is a popular essay. No doubt we advance slowly in the construction of a rational mental science, but the fundamental question still eludes the keenest research. We may hope, however, for further progress in this direction.

ANATOMY AND PHYSIOLOGY OF THE BRAIN IN RELATION TO MENTAL DISEASE.

The Physiology of Man. By Austin Flint, Jr., M.D. Vol. iv. Nervous System. Appleton & Co. New York. 1872. 8vo. 470 pp.

The Structure of the Cerebral Hemispheres. By W. H. Broadbent, M.D.—*London Journal Mental Science*, April, 1870.

The Origin and Signification of the Symptoms of Brain Disease, and the Mechanism of Diseases of the Brain. Two Lectures. By C. E. Brown-Séquard, M.D.—*Archives of Scientific and Practical Med.*, N.Y. 1873.

Mechanism in Thought and Morals. By Oliver Wendell Holmes. Boston: Osgood. 1871.

On the Pathological Anatomy of Paralytic Diseases of the Mind. By Dr. H. Obersteiner. Vienna. *Virchow's Archiv*. Vol. lii. Also, *Jour. Psychol. Med.*, N.Y. Oct. 1871.

The Supraorbital Convolutions. By Dr. Weissbach. *Wiener Med. Jahrbuch*. Also, *Annales Medico-Psych.* Paris: Juillet, 1872.

Clinical Lectures on Mental and Cerebral Diseases. By J. Crichton Brown, M.D. See notice of first lecture on "Brain Wasting." By Geo. E. Day, M.D.—*Jour. Psych. Med.* Oct., 1871.

Notice of some of the results of very recent experiments in Cerebral Physiology. By David Ferrier, M.D.—*British Medical Journal*, April 26, 1873.

Anatomical Investigation of Epilepsy and Epileptiform Convulsion. By Dr. J. H. Jackson.—*British Medical Journal*, May 10, 1873.

Of the Functions of the Cortical Layer of the Great Hemispheres. By Meynert. *Prager Viertelschrift*, 1872.

Some account of the opinions of Griesinger, Van der Kolk, Carpenter, Jaccoud, Schiff, Clark, Jackson, Broca and others, will be found in this JOURNAL, vol. vi. pp. 129, 145, 161 and 177. Flint, in his chapter on the cerebrum, gives a *résumé* of the accepted conclusions of physiologists in regard to the functions of the different cerebral centres. He bases his account of the anatomy of their fibrous connections on the researches of Luys (Paris, 1865), at the same time expressing some doubt of his entire reliability in detail. The existence of a complicated system of transverse fibres, uniting convolutions and parts of convolutions, and of converging fibres between the cortex and basic ganglia is clearly demonstrated. Dr. Broadbent describes these fibres with minuteness. He finds that the radiating central fibres, as he calls them, are not distributed to *all* the convolutions, but that considerable tracts of the cortex are isolated, their cells only communicating with those of neighboring convolutions, by transverse fibres, arranged conveniently for transference of energy in a lateral direction. This structure, with the intricate anastomosing of the cell fibres, provides an apparatus for the organization of associated ideas, impressions and movements.

It is agreed that the grey matter of the hemispheres is the seat of mental operations, but great difficulty has been experienced in locating any special class of ideas. This may have arisen from too great dependence on *destructive* lesions and *destructive* experiments, which give negative rather than positive results. The experiments of Dr. Ferrier, of the West Riding Asylum, mentioned further on, are likely to throw great light on this question of localization. Brown-Séquard has recently insisted on this difficulty of inferring the location of cerebral functions from the place of lesion. Reflex and inhibitory influences, from distant parts of the brain, give no clue, in the absence of a precise knowledge of nervous connections, to the special convolution affected.

Reflex insanity, from coarse central lesions, is not the most frequent form. Anæmia, hyperæmia, neurasthenia, blood changes, and even organic changes of a microscopic nature, may directly affect the cortex and give rise to mental disturbance. The changes of cerebral texture seen in chronic insanity are often secondary, but they may indicate the seat of the original disorder. In general paralysis, for instance, they confirm a belief in the location of the mental functions in the cortex. Dr. Obersteiner divides paralytic imbecility into two stages—1. *Stage of Exudation*. Serous exudation and lymph corpuscles extravasated from the vessels into the perivascular spaces and cerebral substance. Commencement of paresic phenomena, confined to the brain and shown chiefly in mental weakness. 2. *Stage of Formation of Connective Tissue*. The lymph corpuscles organize into connective tissue; the activity of the nervous elements becomes more and more interfered with; atrophy, complete mental decay, spread of paralytic phenomena, marasmus.

Dr. Weissbach finds in the brains of 15 insane persons the supra-orbital convolutions little accentuated with a tendency to blend. Dr. Meynert finds, in General Paralysis, the frontal convolutions most at-

rophied. This every one must have noticed who has made many autopsies in this disease. Dr. Brown says, "brain wasting" is common to general paralysis and to senile decay. He thinks it is seldom general and uniform, but thinks it begins, and is invariably most advanced in the marginal, the ascending frontal and ascending parietal gyri, from which it spreads to the superior frontal gyrus, and the postero-parietal and supra-marginal lobules. The gyri of the occipital lobes rarely participate. The wasting originates in the cortex and spreads to the ganglia at the base, except in those rare cases of propagation from the spinal cord, which Dr. Foville describes (*Annales Medico-Psych.*, Nov. 1872).

As the sequence of mental phenomena is quite regular and well defined in general paralysis, we may infer that the anterior convolutions are the seat of memory, of reason, and of the self-feeling, so sure to be exalted in this disease. The early existence of slight aphasia and agraphia in many cases, goes to confirm a belief in the frontal gyri, as the seat of memory of words.

The results of some very recent experimental researches in cerebral physiology, by David Ferrier, M.D., may be found in the *British Medical Journal*, April 26, 1873. In a notice of experiments on guinea-pigs, rabbits, cats and dogs, after the plan of Fritsch and Hitzig, he concludes:—1st. The anterior portions of the cerebral hemispheres are the chief centres of voluntary motion, and the active outward manifestation of intelligence. 2d. The individual convolutions are distinct centres for different movements. 3d. The action of the hemispheres is generally crossed. 4th. The different epilepsies are, as Dr. J. H. Jackson supposes, "discharging lesions" of these different centres. 5th. Chorea is of the same nature. 6th. The corpora striata are centres chiefly for the flexor muscles of the opposite sides; when irritated, pleurosthotonos occurs. 7th. The optic thalami, fornix, hippocampi majores and convolutions adjoining have no motor signification. 8th. The corpora quadrigemina are concerned in vision and movements of the iris, and are centres for the extensor muscles of the head, trunk and legs; when irritated, opisthotonos occurs. 9th and 10th. The cerebellum regulates the movements of the eye-balls, and maintains the equilibrium of the body. 11th. Nystagmus is a cerebellar epilepsy.

Dr. J. H. Jackson speaks in the most hopeful terms of Dr. Ferrier's novel method of experimenting (*British Medical Journal*, May 10, 1873). He says the plan of *discharging* the separate convolutions by the direct application of electricity, gives results unattainable by the *destruction* of the same parts. He accounts for the absence of paralysis in the latter case, and the existence of convulsions in the former, by the following ingenious speculation. He says the study of hemiplegia shows that *each* part of the corpus striatum represents movements of the *whole* of the parts which that organ governs. The convolutions are the corpus striatum "raised to a higher power." Each part, &c., represents the whole of the movements, which have been represented in the corpus striatum; so then, if *any* part of the cortex in this region be destroyed, there is no loss of movement; but if any one part be strongly discharged, many movements are developed. The convolutions, then, are seen to be centres of the most complicated associated movements and impressions, many times organized under

various combinations. Monkeys are soon to be experimented on to determine the functions of homologous convolutions in man.

SPECIAL FORMS OF MENTAL DISEASE.

Essai de Classification Methodique des Maladies Mentales. Par A. Foville. *Annales Medico-Psych.*, Juillet, 1872.

The Pathology of Hysteria. *Med.-Chirurg. Rev.*, Oct., 1872. (Editor.)

Reynolds' System of Medicine, Vol. II. See Articles on Insanity, Hypochondriasis, Hysteria, Ecstasy, Catalepsy, Somnambulism, Alcoholism, Chorea and Epilepsy.

On Epilepsy, by Le Gonzalez Echeverria, M.D., Univ. Paris. Wood & Co.: New York. 1870.

Influence du Rheumatisme sur le Character. Par le Dr. Faure. *Archiv. Générales.* Sept., 1871.

Effects of Meteorological Facts on Insanity. By the Rev. Thos. E. Crallan, M.A., Chaplain to Sussex Co. Lun. Asylum. 13th Rep.

Discussion sur Alcoholism. Par la Société Medico-Psychologique. Paris. *Annales Medico-Psych.* Sept., 1872.

On Intemperance in its Medical and Social Aspects. Dr. Eastwood. *Brit. Med. Jour.*, 1871.

De l'Alcoholism au point de vue de l'Aliénation Mentale. Par M. le Dr. H. Dagonet. *Annales Medico-Psych.* Mars, 1873.

Genealogical Study of Hereditary Insanity. Esquirol Prize for 1868. By M. G. Doutrebente, M.D., Paris.

Délire des Grandeurs en dehors Paralysie Générale. Esquirol Prize, 1872. By M. H. Tagnet, M.D. Paris.

Le Delire des Persecutions. Par M. Le Grand du Saulle. Paris, 1871. pp. 524. 8vo.

Cancer of the Brain. J. C. Brown, M.D. *Brit. Med. Jour.* Apr. 19th and 26th, 1873.

De l'Anorexie hysterique. Par le Dr. Lesègue. *Archiv. Gen.* Avril, 1873.

Dr. Skae's attempt at pathological Classification (*Edin. Med. Jour.* Nov. 1870) was a decided advance on the old divisions of Esquirol into Mania, Melancholia, Dementia, &c. It is so useful, I am tempted to give it.

Idiocy.	} Moral and
Imbecility.	
Insanity with Epilepsy.	
Insanity of Masturbation.	
Insanity of Pubescence.	
Satyriasis.	
Nymphomania.	
Hysterical Mania.	
Amenorrhœal Mania.	
Post-Connubial Mania.	
Mania of Pregnancy.	
Puerperal Mania.	
Mania of Lactation.	
Climacteric Mania.	
Sthenic and Asthenic Mania.	

Ovario-Mania.
Senile Mania.
Phthisical Mania.
Metastatic Mania.
Traumatic Mania.
Syphilitic Mania.
Delirium Tremens.
Dipsomania.
Mania of Alcoholism.
Post-Febrile Mania.
Mania of Oxaluria, &c.
General Paralysis.
Epidemic Mania.
Idiopathic Mania.

Foville's more recent attempt is less practical, if more scientific.

He makes four classes:—First, insanity *without*, and, second, insanity *with* special anatomical lesions. General paralysis is the only form he is able to place, with confidence, in the second class. Third, acquired cerebral and intellectual infirmities (atrophies and dementias). Fourth, congenital infirmities (idiocy, imbecility and cretinism). The first class would necessarily include most cases of recent mental disorder arising from reflex excitation or inhibition; from cerebral exhaustion and from blood changes of quantity and quality, such as hyperæmia, anæmia, spanæmia and the various toxic conditions.

Uterine specialists and alienists are at variance in regard to the pathology of certain mental symptoms often classed as hysteria. The former are undoubtedly furthest from the truth. Briquet, according to the editor of the *Review* above mentioned, considers hysteria a "perversion of the vital acts which manifest the affections and passions"; in other words, it is a form of moral insanity. Dr. Hewitt, in every sense a gynecologist, says:—"Hysteria is not necessarily associated with disease or derangement of the generative organs of either sex." Dr. Reynolds says:—"The hysteric state is essentially one of mental perturbation." . . . "The uterine disorders coincident with it are more commonly the effect than the cause." The writer in the *Review* says hysteria is a failure of nerve power from various causes, mental and physical, occurring in women, not because they have wombs, but from their naturally more unstable nervous system. Visceral lesions, he thinks, are often secondary.

Dr. Radcliffe's second lecture, on the signs of incipient insanity, is in point. He says want of self-control, or will-power, and disturbance of the affective nature are fundamental, intellectual disturbance being secondary. This is true of hysteria, which he calls *neuriasis*. Under physical symptoms, he enumerates: causeless laughing and crying, globus, *besoin d'uriner*, flatulence, tender spots at pit of stomach, under left nipple and over dorsal spine (the *trépid hysterique* of Briquet), spasms, periodicity, &c. &c. Under mental symptoms: self-sensitiveness, feebleness of will, fancifulness, unbalanced spirits, feeble sense of moral obligation, &c. &c. He says the names *hysteria* and *hypochondria* are misnomers. The name should include the mental as well as the physical symptoms, since the latter are the effect of the former.

Dr. Radcliffe's third lecture treats, in a very interesting way, of cerebral and spinal exhaustion, common sources of nervous and mental disturbance, but generally complicated with blood changes whose special influence it is hard to distinguish. Of the toxic conditions, alcoholism is the most frequent cause of insanity. Dr. Skae mentions three forms, and Dr. Eastwood seven arising from this cause. The scrofulous, cancerous, syphilitic, gouty and rheumatic diatheses each induce mental disease with special peculiarities worthy of study. Uræmia and kindred states are common causes. Malaria, lead poisoning, heat-stroke, each gives a peculiar impress to mental disorder. In our climate, the effect of the weather, on rheumatic subjects particularly, has not received due attention. Mr. Crallan has arranged the results of four years of observation in a lunatic asylum in a diagram, placing admissions, deaths, accession of epileptic fits, relapses of mania, melancholia, &c., so as to be easily compared with wave lines of temperature, solar radiation, amount of ozone, rain, wind, &c. Two hundred and seven of two hundred and twelve fits were preceded or accompa-

nied by marked change of pressure or radiation. He thinks it is the change of weather, at the changes of the moon, which affect epileptics. Alterations of the electric state of the atmosphere have been neglected. Every hospital or weather station should have a captive balloon, with silk cord and electrometer.

Heredity is the predisposing cause in most cases of insanity. It may be so powerful as to give rise to insanity without apparent exciting causes. M. Morel makes hereditary insanity a special variety, and this idea is supported in the essay of Dr. Doutebente. Bad conformation of the head is a prominent feature, especially a bi-lateral flattening. (See A Ready Method of Cranial Comparison, this JOURNAL, Feb. 16, 1871.)

TREATMENT.

Insanity and Insane Asylums. Report of E. T. Wilkins, M.D., Commissioner for California on Asylums in Europe and the United States. 1872.

Transactions of the American Association of Medical Superintendents of the Insane. See *Am. Jour. of Ins.*, vols. xxv.-xxx.

Asiles speciaux pour les Ivrognes. Par Foville. *Annales Medico-Psych.*, July, 1872.

Report of Committee of Medico-Psych. Association on a Plan for the uniform recording of Cases of Insanity and their Medical Treatment. *Jour. of Ment. Sci.*, July, 1873.

The Medical Treatment of Insanity. T. S. Clouston, M.D. *Jour. of Ment. Sci.*, April, 1870.

Insanity and its Treatment. By G. Fielding Blandford, M.D. Oxon. Philadelphia: Henry C. Lea. 1871. Pp. 470. 8vo.

The Physiological Action of Conium Verigo. *Allg. Med. Cent. Zeit.*, July 8, 1871.

Conium in the Treatment of Acute Mania. By J. Crichton Brown, M.D. *Lancet*, June, 1872.

Conium in the Treatment of Insanity. By Daniel H. Kitchen, M.D. *Am. Jour. Ins.*, April, 1873.

Bromide of Potassium in Epilepsy. By Le Grand du Saulle. *Allg. Med. Cent. Zeit.*, No. 27, 1871. Also Riedel, No. 37, and Lutz in *Berlin. Klin. Wochenschrift*, No. 18, 1871.

Ergot of Rye in Mental Diseases. By J. C. Brown. *Practitioner*, June, 1871.

Ergot in the Treatment of Nervous Diseases. By Daniel H. Kitchen, M.D. *Am. Jour. Ins.*, July, 1873.

Letters from Geo. Fielding Blandford, M.D., in *Psychological Jour.*, January, April, July and October, 1872.

Subcutaneous Injection of Morphia in Psychoses. Dr. Wolff. *Archiv für Psych.*, Feb., 1871.

Electricity in Psychiatry. Dr. Rudolph Arndt. *Archiv für Psych.*, February, 1871.

The Temperature in General Paralysis of the Insane. W. J. Mickle, M.D. *Jour. of Men. Sci.*, April, 1872.

Ophthalmoscope in Diseases of Nervous System. By T. Clifford Allbutt. London and New York. 1871. Pp. 405. 8vo.

Ophthalmoscopic Examination of sixty Patients in the State Asylum, Utica, N. Y. H. D. Noyes, M.D. 1872.

The Ophthalmoscope in Mental and Cerebral Diseases. Mr. Aldridge. Also, The Sphygmograph in Lunatic Asylum Practice. Mr. Thompson. *West Riding Reports*. 1872.

Passing by all questions relating to home, cottage or hospital treatment, for the sake of abbreviation; also, the subjects of mechanical restraint and separate asylums for habitual drunkards and criminal insane, we come at once to the strictly medical treatment of insanity. The above subjects will be found fully discussed in the first two documents mentioned. That important part of treatment which consists in the personal moral influence of the physician over his patient, hardly admits of consideration in this place.

Dr. Blandford believes thoroughly in the efficacy of medical treatment in insanity, and is supported by the great majority of practical alienists. This belief has a sure foundation in the fact of the physical basis of all mental disorder. Dr. Blandford treats very satisfactorily of diet and bathing. He advocates forcible feeding for patients who refuse their food because of supposed dyspepsia, with a foul tongue, foetid breath and loaded bowels. Dyspepsia is almost always the result, and not the cause of nervous depression. The fullest diet, with stimulants, often effects a speedy cure. (See page 206.) That a full diet is required in most cases, might be inferred from the impoverished state of the blood, as shown by examination. (See *Lancet*, May 3, 1873, on the Histology of the Blood in 143 Insane.) The proper method of forced alimentation is discussed at length (pp. 215 to 224). Dr. Moxey, in *Lancet*, May 31, 1873, defends his "Nasal Method of Enforced Alimentation." It is a pity such methods cannot be availed of for the thousands of patients, in ordinary practice, who slowly and persistently starve themselves. For a very able analysis of the most common form of voluntary starvation, see the paper of Dr. Leségue on Hysterical Anorexia (*Archives Générales*, April, 1873). It is beyond question that patients are constantly allowed to die of simple starvation through a slipshod expectancy in treatment. In hospitals, the much-dreaded bugbears of mechanical restraint and enforced feeding save more lives than any other single agencies.

Of bathing, Dr. Blandford speaks in qualified praise. He thinks there is risk of too great depression from hot baths of long duration, as used by the French. He prefers, in mania, a bath of 92°, and suggests allowing it to cool while the patient is in it, thus avoiding shock. Dr. Lockhart Robertson strongly advocates the wet sheet in recent mania, frequently applied and long continued. Dr. Blandford intimates that a large part of the benefit derived is from the very efficient mechanical restraint it affords. Dr. Wilkins comes to the conclusion, in his report, that baths are overestimated, and perhaps abused, in France, and too much neglected in this country. Dr. Skae, of Edinburgh, and Dr. Blanche, of Paris, have, after years of experiment, discontinued the warm bath in acute mania, on account of occasional fatal results.

Tonics, stimulants and laxatives are required in most cases of insanity. The underlying diathesis should be medically treated also. On the use of sedatives, some difference of opinion exists, though most alienists rely on them largely, and with good results. No doubt, they are open to great abuse, as Dr. Maudsley affirms, especially when

the chemical restraint of drugs is substituted for a rational use of mechanical restraint, as is the case in some English hospitals, under the pressure of popular feeling.

Opium must still retain the first place in the treatment of melancholia of the subacute form. It has a directly curative effect which chloral has not. Dr. Wolff bases its use on sphygmographic indications, which show that a full dose, after a short period of irritation, acts by paralyzing the vaso-motor nerves. Its use is followed by general relaxation, cessation of agitation, diminished painful nervous sensations, and by psychical and corporeal calm. The dose should be carefully individualized, and should be small when the pulse is already slow and venous system relaxed, as in old age, paralysis, fatty heart, &c.

Chloral is universally employed as the most valuable known hypnotic. It is better suited to cases where excitement exists, though it produces sleep in cases of depression. It may be given to advantage by the rectum. Dr. Madden prefers it to opium in puerperal mania, in doses of from ten to thirty grains. (*Brit. and For. Med.-Chir. Rev.*, Oct., 1871.) Mr. Aldridge examined three patients under the influence of chloral, and found, first, increased vascularity of the retina, followed by anæmia, the condition characteristic of healthy sleep, thus confirming Dr. Hammond's observations (*On the Physiological Effects and Therapeutical Uses of Chloral*, *N. Y. Med. Journal*, Feb., 1870). Though the treatment of mania is assisted by chloral, the disease seems to run a definite though modified course in spite of it. Hence the objection to pushing the remedy to extremes, with a view to cut short the disease, as is often attempted in ordinary practice. I have good reason to know the frequency and danger of this error. Dr. Maudsley, in his address before the Royal College of Physicians, August, 1871, referring to the use and abuse of sedatives, says he is opposed to giving chloral every three or four hours, and reserves its use for bedtime.

Of the extreme value of the *bromides*, especially in epilepsy, perhaps enough has been said in the medical journals of late. For their physiological effects, the reader is referred to the papers mentioned and to Drs. Clarke and Amory's recent monograph.

Hyoscyamus is a valuable and reliable sedative; belladonna is less so, and cannabis indica least of all, though Dr. Clouston strongly recommends the latter in combination with bromide of potassium.

Conium has recently been largely experimented with, and its effects on the temperature and pulse carefully noted. Dr. J. Crichton Brown finds it of great value in mania from its effect on the motor centres. He has observed that the corpora striata participate in the usual vinous staining in patches seen in death from exhaustive mania. He thinks it soothes the irritated and exhausted centres of motor activity, without affecting the mental excitement directly. He finds the average duration of treatment, in twelve cases of recovery from mania treated by conium, to be one hundred and two days; in twelve cases treated by other sedatives, one hundred and fifty days. Dr. Kitchen demonstrates, by thermometer and sphygmograph, its effect in reducing the temperature and pulse, and gives cases showing its effect on muscular activity.

Ergot was found useful by Dr. Brown in (1) recurrent mania, (2) chronic mania with lucid intervals, (3) epileptic mania. Dr. Kitchen

used it to advantage in headaches, both from plethora and anæmia of cerebral vessels, in mania, epilepsy and delirium tremens. He gave it in half dram doses of the fluid extract, or three to six grains of ergotine before meals. He found it did not affect the temperature, but increased the frequency and tension of the pulse. It was shown by Mr. Aldridge to contract the minute arteries of the retina when taken continuously for several days.

Nitrite of Amyl was found to increase the size of the small arteries when at the height of its action.

The use of the ophthalmoscope becomes more and more evident as observations accumulate. The work of Dr. Allbutt, noticed by Dr. Jeffries in his late Report on the Progress of Ophthalmology, will serve as a text-book for the general practitioner, to be supplemented by the more recent investigations of Dr. Noyes, Mr. Aldridge and other observers. No space is left to speak of electricity in its application to mental disease. All the text-books on electro-therapeutics, except that of Drs. Rockwell and Beard, give a chapter to this subject. Electricity is certainly valuable in treating such complications as neuralgia and paralysis, and as a general tonic. Its direct application to the head, with a view to definite effects upon the brain, must be considered as rather empirical at present.

JURISPRUDENCE OF INSANITY.

The Medical Jurisprudence of Insanity. By Isaac Ray, M.D. Fifth Edition. Boston. Little, Brown & Co. 1871. 8 vo. pp. 645.

The Medical Jurisprudence of Insanity. By J. H. Balfour Brown, Esq. London. Churchill. 1871. 8 vo. pp. 333.

Etude Medico-legale sur La Folie. Par A. Tardieu, M.D. Paris. Baillière et Fils. 1872. 8 vo. pp. 610.

On the Scientific Value of the Legal Tests of Insanity. By G. R. Reynolds, M.D. London. 1872.

The Psychology of Criminals. By J. B. Thompson, M.D., Resident Surgeon to General Prison for Scotland, at Perth. *Jour. of Men. Sci.*, October, 1870.

Mania Transitoria. By Dr. Krafft-Ebing. Erlangen. 1868. Also, Theory of Moral Insanity. *Friedreich's Blätter für Gerichtliche Medizin*. 1871.

Criminal Responsibility of Epileptics. By M. G. Echeverria, M.D. *Am. Jour. of Ins.*, Jan. 1873. Also, Violence and Unconscious States of Epileptics, &c. April, 1873.

For some reason, Dr. Ray, one of the most conscientious and conservative of writers, has the reputation, in certain legal circles, of being the leading advocate, if not the author, of what is called the "modern doctrine of insanity." By this is meant the doctrine of moral, emotional or affective insanity. Dr. Ray's division of mania into intellectual and moral, general or partial, is no innovation or novelty. Moral insanity was described by Pinel, early in this century, and has been recognized by every alienist of repute from that day to this. The only difference of opinion has been the theoretical one, whether, in the frequent cases where no intellectual derangement is observed, it does not really exist. This, some claim, must be the case, from the supposed unity of mind, it being impossible, as is maintained, for one of its three grand divisions of intellect, emotion and

will, to be affected separately. Dr. Ray's division is practical and not theoretical. It should always be remembered that the term *moral* is the French *morale*, and includes the character and conduct as influenced by the passions and emotions, as well as by the sense of right and wrong. Simple melancholia is a common example of moral insanity, as it often exists without delusion, even when accompanied by suicidal and homicidal impulse.

The book of Balfour Brown is not quite a *medical* jurisprudence, since its author approaches his subject with something of a legal bias. He, however, admits the same divisions and forms of mental disease given by Dr. Ray. M. Tardieu also recognizes similar distinctions. His book is further valuable for thirty cases, involving medico-legal inquiry. He gives several examples of the "mania of persecution" (see book of Le Grand Du Saulle before mentioned), of which rather common form of disease, Little, the Dix Island murderer, was the victim (State of Maine, Knox Co. vs. Little, 1872). He gives also fifteen *fac similes* of the writing of the insane (see also *Jour. Men. Sci.*, Jan., 1871).

Alienists have long held the time honored legal tests of responsibility in little esteem, and there is a growing distrust of them in judicial quarters, leading here and there to decisions more in consonance with truth. Judge Doe, in a careful review of the subject, denies that there are any well established legal tests of insanity, contradictory precedents annulling each other (see State of N. H. vs. Jones, Andover, N. H., Aug. 12, 1872). Henry L. Clinton, Esq., however, goes out of his way to abuse experts, Dr. Ray particularly, to deny the "modern doctrine of insanity," and to re-affirm the tests of "delusion" and "knowledge of right and wrong" (see argument before Judiciary Com. of N. Y. Senate, April 15, 1873).

Dr. Reynolds's little book shows clearly upon what inadequate scientific grounds these ancient tests repose, and suggests a commission from the legal and medical professions, for the arrangement of some common basis of opinion, and for the settlement of the method of employing experts and other questions of a practical nature.

The hereditary nature of crime and the low mental status of criminals is very ably discussed and illustrated by Dr. Thompson. His paper, as well as the extensive work of Dr. Despine (*Psychologie Naturelle*, &c. 3 vols. Paris. 1868) on the same subject, should be more widely known.

Mania transitoria finds a defender in Dr. Krafft-Ebing, who gives illustrations of seven conditions under which it may occur:—1. The state of dreaming. Of this form, the case of Albert J. Tirrell, defended successfully by Rufus Choate, twenty-five years ago; and the recent case in New Hampshire, of the homicidal boy somnambulist, Fitts, are examples. 2. Different kinds of intoxication. 3. The delirium of fevers. 4. Transformed neuroses, such as epilepsy, chorea, asthma, neuralgia, hysteria, &c. 5. The transitory psychoses (see Dr. Jarvis's Memoir in the *Am. Jour. of Insanity*, July, 1870). 6. Pathological passion. 7. Transitory intellectual troubles at childbirth. Mania transitoria, in some or all its forms, has been recognized by every writer of note for fifty years. The relations of epilepsy to legal medicine are fully treated by Dr. Echeverria, of New York.

Bibliographical Notices.

Mineral Springs of North America: How to reach and how to use them. By J. J. MOORMAN, M.D., Physician to the White Sulphur Springs; Professor of Medical Jurisprudence and Hygiene in Washington University, Baltimore; Member of the Medico-Chirurgical Society of Maryland; of the Baltimore Medical Association, &c. Philadelphia: J. B. Lippincott & Co. 1873. 8vo. pp. 294.

The Mineral Springs of the United States and Canada, with Analyses and Notes on the Prominent Spas of Europe, and a List of Sea-Side Resorts. By GEO. E. WALTON, M.D., Lecturer on Materia Medica in the Miami Medical College, Cincinnati; Committee of the Medical Association of the State of Ohio on "Therapeutics of Mineral Springs." New York: D. Appleton & Co., 549 & 551 Broadway. 1873. 8vo. pp. 390.

SEVERAL years ago, it fell to our lot to notice, for the JOURNAL, the admirable work of Dr. John Bell on Baths, and which must always remain one of the "standard" productions upon the topics of which it treats. Both the writers whose works we are now about to introduce to the readers of the Journal, refer with respect to Dr. Bell's pages, and are careful, throughout, to credit all other authors duly.

It is somewhat remarkable that two works so nearly alike in their subject, scope, and aims, should be almost simultaneously published. An attentive examination of both leads us to highly commend them, for carefulness of preparation, thorough research, and full information upon the points which they examine. Both writers seem to be animated by an honest purpose, and to take a lively interest in the important facts and questions which they consider. Dr. Moorman, whose character and reputation as a physician, are, we presume, well and widely known, has had almost a life-long experience as a resident, professionally, "throughout the watering season" at the White Sulphur Springs of Virginia, upon the value of whose waters we have no need to expatiate, since their virtues are so universally known and appreciated. We believe in the conscientious and careful perusal of Prefaces and Introductions, and are constrained to say that Dr. Moorman's opening pages of this sort are well worthy of attention, although we do not like, nor do we see the necessity for, their caption, viz., "To the Public." This may be a trifle not worth commenting upon, but, in our opinion, it is a blemish upon an otherwise unexceptionable book, which should have been introduced to the world without even a suspicion of the *ad captandum* style. However this may be considered, we do not doubt the sincerity of the author's concluding sentence, in his address "To the Public"—"upon the honest integrity with which they (his opinions) have been formed, the invalid, the profession and the general public may rely."

Dr. Moorman has not—as the title of his volume sufficiently indicates—restricted his researches to the Medicinal Springs of Virginia. Chapter I. is devoted to the consideration of "Mineral Waters in General," and is valuable and interesting. We are somewhat struck, *en passant*, with the copious use of italics in this chapter, and indeed throughout the volume—an undesirable feature, typographically and generally.

Dr. Moorman is to be commended for the straightforward and sensible terms in which he treats of the use of "mineral waters in general"—in some of the earlier pages of his book particularly. Of course, the teaching is not new, from the mouths and pens of medical men, but as the "Public" sadly need instruction upon these points, and that continually, we are glad that they can have the opportunity to be guided by such correct sentiments. The following extracts are specimens of the prevalent tone of remark in the direction to which we have alluded. "Mineral waters are not a *panacea*; they act like all other medicines, by producing certain *effects* upon the animal economy, and upon principles capable of being clearly defined. It follows that there are various diseases and states of the system to which they are not only *not adapted*, but in which they would be eminently injurious" (p. 25). "To one familiar with the many errors and mistakes committed in the use of mineral waters in this country, it will not seem wonderful that numbers return from visiting our most celebrated watering places without having received any essential benefit, but be rather a matter of surprise that so large an amount of good is achieved." * * * "It is a subject of daily and painful observation, at all our principal watering places, to witness numerous individuals using mineral waters that are not adapted to their cases; and still more common is it to see those, to whose cases they are adapted, using them so improperly as entirely to prevent the good they would accomplish under a proper administration" (p. 28). We not only heartily endorse the foregoing remarks, from personal observation, but in addition would signalize the absurdity, so constantly committed at all watering-places, of visitors who are perfectly well, and who come chiefly for pleasure-travel, or to mingle in the gaieties of these resorts, imbibing resolutely, largely and constantly, the medicinal waters. The somewhat ludicrous, though to the individual concerned, rather trying and melancholy, experience of a young man misguided in this manner, and which we witnessed in one of our earliest visits to Saratoga, recurs vividly to our remembrance. Rising early for three successive mornings, he swallowed cup after cup of water from the sparkling fountain—reaching the acme of distention of his stomach on the third morning, when that overcharged viscus relieved itself by an abundant cascade, returning to the surface of Mother Earth most of the liquid just appropriated from her bounteous internal resources! We need hardly add that this hydraulic display was not exactly the *finale*. Our imprudent friend had gripings, many and sore, in the abdomen, and action as if from Glauber's salt for nearly an entire day. His digestion was disturbed, more or less, for a week, and he left the Springs in a ferocious and surly mood, to seek diversion elsewhere. He would have passed his time very pleasantly at Saratoga, if he had let the water alone. He had no need, whatever, for any medication, whether by "mineral waters" or through other vehicles. It is the "old story" over again—much as it is with regard to health-seeking climatically considered—no suitable advice is taken—people dash or creep about the world in a purposeless way, nearly sure to make egregious mistakes, and a thousand times to wish themselves at home. Nothing more easy than to avoid this by being in the first place "sure you're right," before you "go ahead." Consult a conscientious and competent physician, before running at random the round of travel in pursuit of health, or

drinking in reckless succession all the waters of the earth. Only last season, at Sharon Springs, N.Y., whose waters are confessedly powerful and have benefited large numbers of people, we witnessed the most undoubted bad results from needless, ill-directed and over-use of the waters, both internally and in bathing.

It would prolong this article beyond admissible or desirable limits, were we to touch, even, upon the various topics fully treated of in both the volumes under consideration. In Dr. Moorman's book, of course, particular attention is directed to the merits of the Virginia Sulphur Springs, and every information required, it would seem, is given. Between pages 62 and 63, we have a resplendent green *parterre*, with winding walks in white, and this is a "Bird's Eye View of the White Sulphur Springs"—a sort of Complete Guide for the traveller or invalid resident; and, in the very centre of this elaborate picture, we find "Dr. Moorman's office" carefully indicated—this for safety. Close by, is the "Old Ball Room," and not far off a monster "Hotel"; "Music Stands," "Lovers' Walks," "Leaps" and "Rests"—this latter portion of the map a veritable study in its minute subdivisions!

Dr. Walton's book takes a wide range, and seems to have been studiously and carefully prepared. The author says, in his "Preface," that he has endeavored to arrange all the known facts concerning mineral waters in such manner that they shall be readily accessible (p. vi.). He has, for this purpose, examined the works of the best European authors, and has enumerated the medicinal waters of our own Continent. Very thorough analyses of the waters are to be found in both the volumes we notice—more especially, perhaps, in that of Dr. Walton. The latter writer begins his work with an "historical" chapter, and concludes it with one on "Sea-side Resorts." There seems to be an equally honorable and enlightened view of the subject in Dr. Walton's mind as we have accorded to Dr. Moorman; and we cannot do better, perhaps, than to support our assertion by one or two extracts. "Invalids should, as a rule, consult the resident physician on arrival at the Springs, who should be familiar with the precise action of the water, and adjust the dose to the varying conditions. For this purpose the patient should bring with him a statement of his case from his physician, which will enable the resident physician more readily to possess himself of complete knowledge of the course of the disease. Unfortunately, many of the physicians at springs in this country are there for a single season only, and therefore have not the inducement to become thoroughly acquainted with the action of the water, which is secured by permanence. Proprietors of Springs will do well to give close attention to the medical efficiency of their resorts. We cannot refrain from suggesting the impolicy of proprietors or physicians encouraging or permitting patients to remain when the waters are manifestly inapplicable to the disease. Neither is it advantageous for proprietors to advertise their waters as curative of a large number of maladies for which they have no special application. The springs are thus reduced to the level of quack nostrums, and the trifling present gain of such a course is more than counterbalanced by the loss of reputation which the water suffers by failure to cure or relieve" (pp. 116, 117). There are several "Skeleton Maps," very well executed, and sundry illustrations, besides, in Dr. Walton's volume.

The maps are of portions of the country in which springs notably exist, and the latter are carefully indicated. Both volumes give directions "how to reach" the springs in the various sections of the country, and nearly always very correctly. To go to Sharon Springs, N. Y., it is not, now, necessary to take stages from Palatine Bridge—as Dr. Moorman's book states—as the rail goes through to Sharon, by branch from the main track from Albany.

To sum up:—1. Whilst it is easily demonstrable that simple water, one of the best gifts of Providence to mankind, may, like other liquids of greater potency, be abused, so, like them, it clearly has its uses.

2. Mineral waters are often agents of great power, and require care and judgment on the part of the prescriber and of the consumer.

3. Those who use these waters should do so under the advice of competent physicians; and, in addition, they will find a nicely printed Guide-Book and *répertoire* not amiss. So, let them furnish themselves with one or both of the volumes we have been examining; and, if they go into their neighborhood, be sure to consult their authors.

4. Let mere tourists, without special ailments, let mineral waters alone.

Some precautions like the above will bring medicinal springs into better repute and truer usefulness, and they will not—as they nearly always have been—be only, or chiefly, useful (or instrumental) in filling the pockets of sharp landlords, agile bar-tenders, impudent carriage-drivers, indifferent bath-servants or thriving gamblers.

We must not conclude without commending the Publishers of both volumes for the very excellent manner in which the printing, illustration and binding are done; and, as a last compliment to both authors, we thank them for their full and satisfactory indices.

W. W. M.

BOOKS AND PAMPHLETS RECEIVED.

New Remedies, a Quarterly Retrospect of Therapeutics, Pharmacy and Allied Subjects. New York: William Wood & Co. July, 1873.

Wharton & Stillé's Medical Jurisprudence. 3d Edition. Philadelphia: Kay & Brother. 1873. 2 vols.

On Marienbad Spa and the Diseases Curable by its Waters and Baths. By Appollinaris Victor Iagieliski, M.D., Berlin. London: Trübner & Co. 1873. Pp. 185.

Annual Reports of the Board of Visitors, Trustees, Treasurer and Superintendent, of the New Hampshire Asylum for the Insane. Nashua: Orren C. Moore, State Printer. 1873.

An Eye Case in the Courts. By C. A. Robertson, A.M. (Harv.) M.D. Albany: The Argus Co. 1873. Pp. 21.

Fifteenth Annual Report of the Medical Superintendent of the Nova Scotia Hospital for the Insane. Halifax, N. S. 1873. Pp. 72.

The Unity of Natural Phenomena. From the French of M. Emile Saigey, with an Introduction and Notes by Thomas Freeman Moses, A.M., M.D. Boston: Estes & Lauriat. 1873. Pp. 253.

On Yeast, Protoplasm and the Germ Theory. By Thomas H. Huxley, F.R.S.

The Relations between Matter and Force. By Prof. John H. Tice, of St. Louis. Boston: Estes & Lauriat. 1873. (Both from the Publishers.)

Boston Medical and Surgical Journal.

BOSTON: THURSDAY, JULY 31, 1873.

DURING the past few weeks, all doubt as to the existence of cholera in this country has passed away. It has shown the same erratic character as in previous epidemics, seizing upon certain localities, killing and dispersing the inhabitants, and in a few weeks subsiding, and transferring its ravages to another place. Meanwhile, its general advance northward and eastward is quite evident. That it will, ere long, reach the great cities of the Atlantic seaboard must be regarded as extremely probable. The duty of the hour is to prepare to meet it by scrupulous cleanliness in all our crowded towns. Our profession are the natural guardians of public health, and will always be found ready to assist the authorities in this work for the preservation of life. There has not been a time during the past quarter of a century when this influence could be used to such advantage as in this present summer of 1873.

A WRITER in a Washington paper has recently suggested a novel method of cooling and purifying the air of large cities during the heated term. The waste-water of fountains was to be sent one or two hundred feet into the air in the form of fine spray or vapor, by powerful machinery intended to force it through a form of atomizing apparatus. The temperature of the air is said to be materially lowered by the presence of this vapor, which also greatly increases its purity by the removal of all dust particles with which the air may be charged. Although no such wholesale system as our ingenious friend suggests may prove to be feasible, there is no doubt that much might be done to make our cities more comfortable and attractive during the hot weather than they now are, and we are glad to see that people are beginning to realize it. It is doubtless a difficult task to cleanse an atmosphere charged with every possible sort of impurity which has accumulated during a dry term. We can, however, do much to prevent this contamination of the air by attacking the sources whence the dust particles arise. The more dangerous of these are already, in this city, being properly attended to by our Board of Health. The cellars and vaults are purged of their filth, but why should not our streets and thoroughfares which are frequented by all classes of the community be kept in a condition more conducive to their health and comfort? We cannot help feeling that no greater step can be taken

towards beautifying and rendering attractive a large city, to say nothing of the effect upon its health, than in an improved system of keeping its streets clean and free from dust. We have yet to learn in this respect much from certain European cities. The system by which the French capital is kept in such superb condition is perhaps the most perfect that exists, and we would recommend it to the attention of our city fathers. The streets in that city are daily swept and watered, and a large array of workmen are permanently employed to keep them in proper repair. In this city, a street once made is supposed to run itself for an indefinite period, is rarely swept and never watered by the city. Would not the beauty of the city, the value of its property and the health of its inhabitants be enhanced by such an improvement. It would necessitate undoubtedly a large appropriation, but we think it would pay.

RARE DISEASE OF THE EYELIDS.—Dr. Argyll Robertson describes a rare affection of the eyelids, which he denominates elephantiasis of the lids. In the case which came under his observation, the disease appears to have begun as an ordinary cedema, but had endured for several years even after repeated and various treatment. Further, there was little pitting on pressure, and no cedema in any other part of the body, nor was there any sign of cardiac or renal disease. The swollen condition of the lids had the unfortunate effect of narrowing the field of vision, and thus interfering with the patient's occupation, on which account it was proposed to remove a considerable portion of the hypertrophied skin.—*Edinburgh Medical Journal*.

Correspondence.

NEW ORLEANS, LA., July 11th, 1872.

MESSRS. EDITORS.—During the past ten days, our city has been without the usual Gulf breezes which render our nights cool and refreshing and moderate the fierce heats of a sub-tropical summer. Several cases of sunstroke have occurred, and in one, in which the temperature was noted, it was found to be 112° in the axilla at the moment of death.

As a general rule, sunstroke is much less common in New Orleans than in Philadelphia and New York. This difference appears to be due to the more uniform temperature, the wide streets, the great extent of ground occupied by the city along the banks of the greatest river in the world, the prevalence of cool, refreshing Gulf breezes, the large rain-fall, and the absence of any very great crowding of the population in New Orleans.

Up to the present time, New Orleans has been free from yellow fever. During the past two years, yellow fever has prevailed "sporadically" during the months of August, September and October. In 1867, the epidemic of yellow fever affected the entire city, and though an immense number of cases occurred (estimated by some as high as 80,000), the mortality was small, being only 3,107 in a population of near 200,000. Preceding this epidemic, the citizens and Confederate soldiers, who had suffered a temporary absence during the civil war, returned, and there was also considerable influx of emi-

grants and strangers. It is supposed that the greater proportion of the population of New Orleans, who were susceptible to the action of the poison of yellow fever, were affected at this time; and the subsequent exemption of the city from the pestilence is referable chiefly to the fact that there has subsequently been no great influx of emigrants and strangers.

The temporary check in the natural growth of this important city, by additions from Northern and Western States and from Europe, has been referred, by some, to bad government and such an enormous increase of taxation as to render the possession of real estate an actual calamity.

The deaths from yellow fever during the past five years were as follows:—in 1868, 3; 1869, 3; 1870, 587; 1871, 52; 1872, 39.

The relative mortality to the number of cases has been great during the past two years; thus, in 1871, of 114 cases, officially reported, 54, or nearly one half, terminated fatally; in 1872, of 83 cases, 39 proved fatal.

The circumscribed nature of the yellow fever of 1871 and 1872 cannot be justly referred to any improvement in the sanitary condition of the city, nor to any measures for the arrest of the disease, for the manifest reason that the disease has, at various times in the history of New Orleans, been limited in a similar manner; thus, in 1844, there were 148 deaths; in 1845, 2 deaths; in 1846, 160 deaths; 1850, 107 deaths; 1851, 17 deaths; 1856, 74 deaths; 1859, 91 deaths; 1860, 15 deaths; and 1866, 185 deaths from yellow fever.

The attempts to decry a just system of quarantine, upon such slender and uncertain data as those furnished by the limited prevalence of the disease in 1871 and 1872, is scarcely worthy of serious consideration, much less of an extended discussion. A similar remark is applicable to the so-called sanitary measures, which some have vaunted as the cause of the limitation of the disease in 1871 and 1872. We are in favor of the most rigid sanitary measures and of the most carefully conducted experiments; but we are opposed to hasty conclusions drawn from a limited experience of two or three years.

During the past six months of the present year (1873), meningitis has prevailed to such an extent as to attract some degree of consideration; 79 whites and 41 colored (total, 120) having fallen victims to this form of disease. As far as my experience extends, cerebro-spinal meningitis (epidemic meningitis) is characterized by true inflammatory symptoms; viz., elevation of temperature, derangement of digestion, aberration of nervous and muscular phenomena and increase of fibrin in the blood. *Post-mortem* examinations have confirmed previous observations, that the disease consists essentially of an inflammation of the arachnoid and pia mater of the brain and spinal cord. Unlike the true fevers, the blood is charged with fibrin, and fibrinous deposits are formed within and around the inflamed meninges of the brain and spinal cord. The fatality attending this disease must be referred to the character of the organs involved, and also to the destructive effects, caused by the effusion of coagulable lymph and inflammatory products, within the cavity of the cranium and spinal cavity. Cerebro-spinal meningitis is to the membranes of the brain and spinal cord what pleuritis is to the investing membrane of the lungs. It should be classed with the phlegmasiæ, in which there is an actual increase in the fibrin of the blood, and not with the pyrexia, in which this element is deficient. The treatment which has yielded the best results in my hands, has been the application of blisters to the back of the head and along the spine, purgatives and the alterative action of mercury in combination with opium and quinine. The bowels are freely opened by means of calomel and injections, and the patients are kept, during the active stages, under the influence of small doses, at regular intervals, of calomel, quinine and opium. From one-fourth to one-half of a grain of opium, in combination with one grain of calomel and two grains of quinine, are administered to adults every three or four hours. Hydrate of chloral and bromide of potassium, administered in medium doses at short and regular intervals, proved beneficial in some cases, in addition to the remedies just mentioned. The diet should be light, but nutritious—beef-tea and milk, and, when the pulse is feeble and rapid, milk punch. It should be remembered, that when the active inflammation subsides, convalescence is necessarily protracted and tedious,

in cerebro-spinal meningitis, on account of the efforts of the fibrinous effusion upon the functions of the brain and spinal cord. It is important, therefore, that the strength should be sustained by the judicious use of tonics and alcoholic stimulants, and by good diet, during the protracted convalescence. The absorption of the inflammatory products may be promoted by iodine and iodide of potassium. After the subsidence of the active inflammatory symptoms, the loss of muscular power and paralysis which remain, in some cases, may be relieved by the careful use of electricity.

The recent epidemic of cholera, which commenced in the early part of February and disappeared in the latter part of June, was less severe than in the two previous visitations of this pestilence in New Orleans. Although the fatal cases were marked by the prominent symptoms of Asiatic cholera, and presented, upon *post-mortem* examination, its characteristic lesions, the vast proportion of the cases, "when taken in time," yielded readily to treatment, and the mortality has been comparatively small. Thus, during the months of February, March, April, May and June, 117 whites and 116 blacks (total, 233) died from what was registered in the official mortuary reports as cholera sporadica; and cholera morbus and cholera infantum destroyed 62 whites and 22 colored; diarrhoea and dysentery, 109 whites and 48 colored; total deaths from all intestinal diseases during the past six months, whites 366, colored 234 (total, 600).

This is comparatively small mortality from cholera in a population of 200,000; and as the whites constitute about three-fourths, and the colored people only one-fourth, it is evident that cholera, as well as other intestinal diseases, has been much more fatal amongst the colored population. This difference appears to be due in large measure to the fact, that as a general rule, the colored people occupy the more unhealthy and crowded portions of the city, and are less careful in their habits and diet.

The sudden subsidence of the cholera, is not to be referred to the sanitary condition of the city, which could not, perhaps, be much worse at this season of the year; nor to the universal employment of any special means of disinfection. Numbers of cases have occurred in localities where no disinfection was practised, and it is probable that only the severe and fatal cases have been reported to the local sanitary officers. The peculiarly mild character of the recent epidemic, may be due to certain unknown conditions of the atmosphere and soil, and to the heavy rain-fall, almost twenty-two inches of water having fallen during the past six months.

Cholera first appeared in New Orleans, Oct. 25, 1832. The population of the city was, at that time, about 50,000. Dr. Campbell, one of the oldest physicians in New Orleans, informs me that in 1832, cholera spread with wonderful rapidity all over the city, and that the mortality was fearful, as many as 500 deaths having occurred in one day. Entire families were swept off; the living were scarcely able to bury the dead. The disease committed great ravages upon the surrounding plantations. The alarm amongst the negroes was so great, that in one instance the entire population of a large sugar plantation on the Mississippi river fled and encamped upon the borders of Lake Ponchartrain.

Whatever measures may be instituted in the treatment of cholera, absolute rest from the inception of the first symptoms, and throughout the disease, is absolutely essential.

Whatever doubts might be entertained in the minds of the physicians of New Orleans, as to the nature of the recent epidemic, it is now well established, that the disease has followed the main lines of commerce on the Mississippi river, prevailing at various towns and plantations, up to Memphis, from which latter place it is supposed to have been carried to Nashville, Tennessee.

I will endeavor to forward to your valuable JOURNAL such facts as I may be able to gather with reference to the recent epidemic of cholera in Tennessee.

Respectfully,
JOSEPH JONES, M.D.

493 St. Charles Street.

Medical Miscellany.

TO REMOVE A PLASTER BANDAGE.—Soak the bandage in a solution of salt. The plaster crumbles.—*Clinic*.

THE BRITISH MEDICAL ASSOCIATION has increased its number of members from two to five thousand during the last ten years. This is mainly due to the influence of the *British Medical Journal*, which has a circulation of several hundred outside the association.

ANTI-NEURALGIC SNUFF.—Dr. F. Scriffignano recommends in facial neuralgia, especially of the periodic form, the use of snuff containing fifty centigrammes of quinine to one gramme of tobacco. Pinches of this mixture are to be taken at frequent intervals during three consecutive days.

EXCHANGES WITH PERIODICALS.—In consequence of the new post office regulations, which now require the payment of postage on periodicals in exchange for other periodicals, the *JOURNAL* will in future be discontinued to some of the Publishers who have heretofore received it in exchange. In cases where the exchange is continued, we shall, unless some other arrangement be made, pay the postage here on exchanges that come to us, and expect the same to be done on ours where received.

EXCISION OF SUPERIOR MAXILLARY.—John P. Wall, M.D., of Tampa, Florida (*Atlanta Med. and Surg. Journal*), records a case of excision of the superior maxillary bone, the patient being a female child of eight years. The chief interest of the case consisted in the absence of any kind of pain, the rapidity of the growth without known cause, and the rarity of such a diseased condition of this bone in children.

THE CHOLERA IN EUROPE.—A report from Vienna, dated July 3d, states that a formal denial is given to the news of an outbreak of cholera in this city. A few cases have occurred among foreigners who have arrived from places where the epidemic prevails, or passed through the infected districts on their way hither. The disease has no epidemic character, and the general health of the city is satisfactory. In the Dresden district, from June 24th to July 7th, there had been 55 cases with 29 deaths. In Breslau, up to Monday night, 18 persons had been attacked, of whom 14 had died. A cholera committee has been appointed for the German empire, consisting of General Surgeon Dr. Böger and Dr. Hirsch of Berlin, Dr. Max von Pettenkofer of Munich, Dr. Günther of Zwickau, and Dr. Volz of Carlsruhe. Eight cases, with four deaths, are reported to have occurred at Lautenburg near Strasburg. Cholera has broken out in the Italian provinces of Treviso and Venice. In the former, up to July 8th, there has been 41 cases, with 25 deaths and 28 recoveries; in the latter, 55 cases, with 26 deaths and two recoveries.

THE PROSECUTION OF OBSCENE QUACKS.—The Society for the Suppression of Vice, whose age numbers three-score and ten years, held its annual meeting this week in the Freemasons' Tavern, Great Queen Street; Lord Ebury in the chair. The report stated that as to pretended medical works, the Committee had hitherto refrained from interfering, as they conceived it rather the duty of the College of Surgeons or the Treasury to test the question whether the law would afford a remedy in such cases. As neither took up the point, the Society had tried the question whether such works were protected by law, and had obtained a favorable judgment, which would operate as a precedent ever after in similar cases. The Society, therefore, earnestly appealed for contributions to discharge this amount. A prosecution had also been undertaken against a so-called anatomical museum, the result of which had been an intimation that it would be closed.—*British Medical Journal*.

REPLANTATION OF TEETH.—An article in the January number of the *DENTAL COSMOS*, on "Replantation of Teeth," leads me to state that in my practice replantation of teeth has nearly ceased to be an experiment. Within the last three years I have successfully performed the operation on five teeth (two for one patient). In each case the tooth was badly decayed, and the root ulcerated. After extracting and treating the tooth socket, I treated the root, and filled not only the cavity but the nerve canal in the root, and replaced the tooth, and without an exception each operation has been a perfect success.

The first patient whose tooth I treated in this way was a young man with whom I was very intimate; he had an ulcer, which gave him much trouble, on the superior incisor. It had been filled several times with different materials without satisfactory results, and he was obliged to have it extracted, and as an experiment I offered to undertake the operation of replacing it, after removing the ulcer and properly filling the tooth. The operation consumed about seventy minutes. There was much sensitiveness about the tooth at first, which soon subsided, and about a year afterward he had the other superior incisor treated in the same manner.

It is now over two years since the last operation, and, to use his own words, "They are the best teeth I have." Since then I have performed the operation on three different patients, and every case has proved a perfect success.—*Dental Cosmos*.

TUBERCULOSIS AND HUMANIZED LYMPH.—In a correspondence of the *Gazette Medicale*, 26th April, there are some propositions formulated by Drs. Paraskava and Zallones, of Greece, concerning repeated experiments made by them of inoculation on rabbits, of vaccine virus taken from persons in the second stage of phthisis. From these they think it seems as if tuberculosis were transmissible by vaccine. Here are their words:—

1. The animals on whom the experiments were made, were in the most healthy condition.

2. Vaccine taken from a tubercular person may produce tuberculosis on one (animal) that enjoys perfect health.

3. The blood of a person with cavities in the lungs, carries with it the tubercular virus, and this poison is found in the liquid and solid part of the blood.

4. Fourteen days sufficed for the development of the tubercle in the animals affected.—*L'Independente*, May, 1873.

MORTALITY IN MASSACHUSETTS.—Deaths in fourteen Cities and Towns for the week ending July 19, 1873.

Boston, 191—Charlestown, 16—Worcester, 19—Chelsea, 11—Cambridge, 21—Salem, 12—Lawrence, 14—Lynn, 9—Fitchburg, 4—Newburyport, 2—Somerville, 7—Fall River, 33—Haverhill, 5—Holyoke, 18. Total, 362.

Prevalent Diseases.—Cholera infantum, 81—consumption, 48—scarlet fever, 18—dysentery and diarrhoea, 13.

Six deaths from smallpox occurred in Holyoke, and one in Boston. Of the deaths from cholera-infantum, forty-three occurred in Boston, eleven in Worcester, ten in Fall River and eight in Lawrence. Of the deaths from scarlet fever, fourteen occurred in Boston.

GEORGE DERBY, M.D.,
Secretary of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, July 19, 1873. Males, 84; females, 97. Accident, 4—apoplexy, 4—inflammation of the bowels, 5—bronchitis, 1—inflammation of the brain, 1—congestion of the brain, 2—disease of the brain, 9—cyanosis, 1—cancer, 2—cholera infantum, 47—cholera morbus, 4—consumption, 20—convulsions, 6—debility, 4—diarrhoea, 6—dropsy of the brain, 4—drowned, 1—dysentery, 9—erysipelas, 1—scarlet fever, 7—typhoid fever, 2—disease of the heart, 7—hemorrhage, 1—disease of the kidneys, 6—congestion of the lungs, 3—inflammation of the lungs, 6—marasmus, 6—old age, 2—paralysis, 1—pleurisy, 1—premature birth, 2—peritonitis, 2—pyæmia, 1—rheumatism, 1—scalded, 1—sunstroke, 1—unknown, 1.

Under 5 years of age, 104—between 5 and 20 years, 10—between 20 and 40 years, 22—between 40 and 60 years, 24—over 60 years, 21. Born in the United States, 143—Ireland, 23—other places, 15.